CLAIMS

What is claimed is:

1. A method for making a rotatable body, wherein a balancing plug comprises first and second ends, and wherein a center of gravity of said balancing plug is closer to said first end than said second end, wherein said method comprises the steps of:

executing a first disposing step comprising disposing a first said balancing plug in a first hole of a rotatable body; and

executing a second disposing step comprising disposing a second said balancing plug in a second hole of said rotatable body, wherein a position of said second said balancing plug in said rotatable body is inverted in relation to a position of said first said balancing plug within said rotatable body.

2. A method, as claimed in Claim 1, wherein:

said rotatable body comprises a plurality of balancing plug holes that are equally spaced about a rotational axis of said rotatable body on a common reference circle, that are parallel with said rotational axis of said rotatable body, and that comprise said first and second holes.

3. A method, as claimed in Claim 1, wherein:

said center of gravity of said first said balancing plug and said first end of said first said balancing plug are separated by a first distance, wherein said center of gravity of said second said balancing plug and said first end of said second said balancing plug are separated by a second distance that is equal to said first distance, and wherein said first said balancing plug and said second said balancing plug are of a common length.

4. A method, as claimed in Claim 1, wherein:

said first end of said first said balancing plug in said first hole and said second end of said second said balancing plug in said second hole are disposed within a common reference plane that is perpendicular to a rotational axis of said rotatable body, and wherein said center of gravity of said first said balancing plug and said center of gravity of said second said balancing plug are disposed at different vertical positions.

5. A method, as claimed in Claim 4, wherein:

said first said balancing plug and said second said balancing plug are of a common length.

6. A method, as claimed in Claim 1, wherein:

said first and second said balancing plugs are of a common length and disposed at a common vertical position within said first and second holes, respectively, wherein said center of gravity of said first said balancing plug and said center of gravity of said second said balancing plug are disposed at different vertical positions.

7. A method, as claimed in Claim 1, wherein:

said first disposing step and said second disposing step are executed from a common side of said rotatable body.

8. A method, as claimed in Claim 1, wherein:

said rotatable body is a motor/disk assembly of a disk drive, wherein said first and second disposing steps are each executed with said motor/disk assembly being mounted to a base plate of said disk drive.

9. A method, as claimed in Claim 1, wherein:

said first said balancing plug may be disposed in said first hole with said first end of said first said balancing plug being disposed above said second end of said first said balancing plug, as well as with said second end of said first said balancing plug being disposed above said first end of said first said balancing plug; and

said second said balancing plug may be disposed in said second hole with said first end of said second said balancing plug being disposed above said second end of said second said balancing plug, as well as with said second end of said second said balancing plug being disposed above said first end of said second said balancing plug.

10. A method, as claimed in Claim 1, wherein:

said first and second said balancing plugs are either of a common configuration or a different configuration and of a common weight or a different weight.

11. A method, as claimed in Claim 1, wherein:

said balancing plug comprises first and second flexible flanges spaced along a length of said balancing plug.

12. A method, as claimed in Claim 1, wherein:

said first disposing step comprises flexing a first flange associated with said first said balancing plug; and

said second disposing step comprises flexing a second flange associated with said second said balancing plug.

13. A method, as claimed in Claim 12, further comprising the step of:

maintaining said first said balancing plug in a predetermined position within said first hole using at least said first flange; and

maintaining said second said balancing plug in a predetermined position within said second hole using at least said second flange.

14. A method, as claimed in Claim 1, further comprising the step of:

maintaining said first said balancing plug in a predetermined vertical position within said first hole; and

maintaining said second said balancing plug in a predetermined vertical position within said second hall.

15. A method, as claimed in Claim 14, wherein:

said maintaining said first said balancing plug step uses only a frictional engagement between said first said balancing plug and said rotatable body; and

said maintaining said second said balancing plug step uses only a frictional engagement between said second said balancing plug and said rotatable body.

16. A method, as claimed in Claim 1, further comprising the steps of:

balancing said rotatable body in a first plane that comprises said first disposing step; and

balancing said rotatable body in a second plane that comprises said second disposing step, wherein said first and second planes are vertically offset relative to said rotational axis.

17. A method, as claimed in Claim 1, further comprising the steps of:

executing a third disposing step comprising disposing a third said balancing plug in a third hole of said rotatable body, wherein said center of gravity of said first said balancing plug and said center of gravity of said third said balancing plug are disposed within a first reference plane that is perpendicular to a rotational axis of said rotatable body; and

executing a fourth disposing step comprising disposing a fourth said balancing plug in a fourth hole of said rotatable body, wherein said center of gravity of said second said balancing plug and said center of gravity of fourth said balancing plug are disposed within a second reference plane that is perpendicular to said rotational axis of said rotatable body, wherein said first and second reference planes are parallel.

18. A method, as claimed in Claim 17, wherein:

a distance between said center of gravity and said first end is the same for each of said first, second, third, and fourth said balancing plugs, and wherein said first, second, third, and fourth said balancing plugs are of the same length.

19. A method, as claimed in Claim 1,wherein:

said rotatable body is a disk drive motor/disk assembly that comprises at least one data storage disk, wherein said method further comprises the step of forming a plurality of tracks on each said data storage disk of said motor/disk assembly, wherein said forming step is executed after said first and second disposing steps.

20. A method, as claimed in Claim 19, further comprising the step of:

installing said motor/disk assembly on a base plate of said disk drive, wherein said first and second disposing steps are executed after said installing said motor/disk assembly step.

21. A method, as claimed in Claim 20, further comprising the step of:

installing a cover of said disk drive on said base plate, wherein said first and second disposing steps are executed before said installing a cover step, and wherein said forming step is executed after said installing a cover step.

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22. A method for making a rotatable body using a plurality of balancing plugs, wherein each said balancing plug comprises first and second ends that are separated by the same distance, wherein each said balancing plug has a center of gravity that is closer to its first end than its second end, and wherein a spacing between said center of gravity and said first end is the same for each said balancing plug, wherein said method comprises the steps of:

executing a first balancing step comprising balancing said rotatable body within a first plane by disposing at least one said balancing plug in a hole in said rotatable body, wherein each said balancing plug used by said first balancing step has its said first end disposed at a first elevation within said rotatable body; and

executing a second balancing step comprising balancing said rotatable body within a second plane that is spaced from said first plane by disposing at least one said balancing plug in a hole in said rotatable body, wherein each said balancing plug used by said second balancing step has its said second end disposed at said first elevation within said rotatable body.

23. A method, as claimed in Claim 22, wherein:

said rotatable body comprises a plurality of balancing plug holes that are equally spaced about a rotational axis of said rotatable body on a common reference circle, and that are parallel with said rotational axis of said rotatable body.

24. A method, as claimed in Claim 22, wherein:

said first and second balancing steps are executed from a common side of said rotatable body.

25. A method, as claimed in Claim 22, wherein:

said rotatable body is a disk drive motor/disk assembly, wherein said first and second balancing steps are each executed with said motor/disk assembly being mounted to a base plate of said disk drive.

26. A method, as claimed in Claim 22, wherein:

at least one said balancing plug used by said first balancing step is of a different configuration from at least one other said balancing plug used by said first balancing step.

27. A method, as claimed in Claim 22, wherein:

at least one said balancing plug used by said first balancing step is of a different weight than at least one other said balancing plug used by said first balancing step.

28. A method, as claimed in Claim 22, wherein:

each said balancing plug comprises first and second flexible flanges that are spaced along a length dimension of said balancing plugs.

29. A method, as claimed in Claim 22, wherein:

said first and second balancing steps each comprise flexing at least one flange of each said balancing plug during its corresponding said disposing step.

30. A method, as claimed in Claim 22, wherein:

said center of gravity of each said balancing plug used by said first balancing step is within a first reference plane that is perpendicular to a rotational axis of said rotatable body; and

said center of gravity of each said balancing plug used by said second balancing step is within a second reference plane that is perpendicular to said rotational axis and that is spaced from said first reference plane.

31. A method, as claimed in Claim 22,wherein:

said rotatable body is a disk drive motor/disk assembly that comprises at least one data storage disk, wherein said method further comprises the step of forming a plurality of tracks on each said data storage disk of said motor/disk assembly, wherein said forming step is executed after said first and second balancing steps.

32. A method, as claimed in Claim 31, further comprising the step of:

installing said motor/disk assembly on a base plate of said disk drive, wherein said first and second balancing steps are executed after said installing said motor/disk assembly step.

33. A method, as claimed in Claim 32, further comprising the step of:

installing a cover of said disk drive on said base plate, wherein said first and second balancing steps are executed before said installing a cover step, and wherein said forming step is executed after said installing a cover step.

34. A rotatable body, comprising:

first and second balancing plug holes;

a first balancing plug disposed in said first balancing plug hole, wherein said first balancing plug comprises first and second ends separated by a first distance, wherein a center of gravity of said first balancing plug is closer to said first end than said second end, and further is separated from said first end by a second distance, and wherein said first end of said first balancing plug is disposed above said second end of said first balancing plug when said first balancing plug is installed in said first balancing plug hole; and

a second balancing plug disposed in said second balancing plug hole, wherein said second balancing plug comprises third and fourth ends separated by a third distance, wherein a center of gravity of said second balancing plug is closer to said third end than said fourth end, and further is separated from said third end by a fourth distance, and wherein said fourth end of said second balancing plug is disposed above said third end of said second balancing plug when said second balancing plug is installed in said second balancing plug hole.

35. A rotatable body, as claimed in Claim 34, wherein:

said first and second balancing holes are disposed on a common bolt circle having a center coinciding with a rotational axis of said rotatable body.

36. A rotatable body, as claimed in Claim 34, wherein:

said first and second balancing holes are parallel with a rotational axis of said rotatable body.

37. A rotatable body, as claimed in Claim 34, wherein:

said first and second balancing holes are accessible from a common side of said rotatable body.

38. A rotatable body, as claimed in Claim 34, wherein:

said rotatable body comprises a plurality of balancing plug holes that are equally spaced about a rotational axis of said hub on a common bolt circle having a center that coincides with said rotational axis, wherein said plurality of balancing plug holes comprises said first and second balancing plug holes.

39. A rotatable body, as claimed in Claim 34, wherein:

said first and second balancing plugs each comprise first and second longitudinally spaced flexible flanges.

40. A rotatable body, as claimed in Claim 39, wherein:

said first and second flexible flanges of said first balancing plug each define a maximum diameter for said first balancing plug, and wherein said first and second flexible flanges of said second balancing plug each define a maximum diameter for said second balancing plug.

41. A rotatable body, as claimed in Claim 34, wherein:

said center of gravity of said first balancing plug is disposed within a first reference plane that is perpendicular to a rotational axis of said rotatable body, wherein said center of gravity of said second balancing plug is disposed within a second reference plane that is perpendicular to said rotational axis, wherein said first and second reference planes are separated by a distance of at least about 1 millimeter measured along a line that is perpendicular to each of said first and second reference planes.

42. A rotatable body, as claimed in Claim 34, wherein:

said center of gravity of said first balancing plug and said center of gravity of said second balancing plug are disposed at different elevations within said rotatable body that are separated by a distance of at least about 1 millimeter measured along an axis that is parallel to a rotational axis of said rotatable body.

43. A rotatable body, as claimed in Claim 34, further comprising:

third and fourth balancing plug holes; and

a third balancing plug disposed in said third balancing plug hole, wherein said third balancing plug comprises fifth and sixth ends separated by a fifth distance, wherein a center of gravity of said third balancing plug is closer to said fifth end than said sixth end, and further is separated from said fifth end by a sixth distance, and wherein said fifth end of said third balancing plug is disposed above said sixth end of said third balancing plug; and

a fourth balancing plug disposed in said fourth balancing plug hole, wherein said fourth balancing plug comprises seventh and eighth ends separated by a seventh distance, wherein a center of gravity of said fourth balancing plug is closer to said seventh end than said eighth end, and further is separated from said eighth end by an eighth distance, wherein said eighth end of said fourth balancing plug is disposed above said seventh end of said fourth balancing plug.

44. A rotatable body, as claimed in Claim 43, wherein:

said center of gravity of said first balancing plug and said center of gravity of said third balancing plug are disposed within a first reference plane that is perpendicular to a rotational axis of said rotatable body, and a wherein said center of gravity of said second balancing plug and said center of gravity of said fourth balancing plug are disposed within a second reference plane that is perpendicular to said rotational axis of said rotatable body, wherein said first and second reference planes are parallel and spaced from each other.

45. A rotatable body, as claimed in Claim 44, wherein:

said first and second reference planes are spaced by a distance of at least about 1 millimeter.

46. A rotatable body, as claimed in Claim 43, wherein:

said first and third distances are equal, wherein said second and fourth distances are equal, wherein said fifth and seventh distances are equal to each of said first and third distances, and wherein said sixth and eighth distances are equal to each of said second and fourth distances

47. A rotatable body, as claimed in Claim 34, wherein:

said first and third distances are equal, and wherein said second and fourth distances are equal.